

**REMARKS**

Claims 1-22 are pending in the present application. Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action of January 25, 2005, the following actions were taken:

- (1) the specification was objected to because of certain informalities;
- (2) claims 10 and 19 were objected to because of certain informalities;
- (3) claims 6 and 19 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite;
- (4) claims 1-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0659852 (hereinafter "EP '852") in view of EP 0509688 (hereinafter "EP '688").

It is respectfully submitted that the presently pending claims be examined and allowed. Applicants submit that each and every amendment herein, and throughout the prosecution of the present application is fully supported by the specification as originally filed, and that no new matter has been added.

Objections to the specification and claims

The specification and claims were objected to due to some minor informalities. The specification and claims were amended appropriately to remove these objections. Specifically, the second usage of the term "Direct Black 168" was deleted from the appropriate places in the specification and claims. Further, reference to "Direct Black IJ Dye" was deleted from claims 6 and 19 to correlate these claims to the list disclosed in the specification. In other words, the claims now match the specification, and the redundancies have been removed. Further, a space has been added between the word "to" and the numeral "6" as requested by the Examiner. Regarding claims 10 and 11, literal support for these claims has been incorporated into the specification as requested by the Examiner. As such, each of the objections to the specification and the claims has been addressed by amendment, and withdrawal of these objections is respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph

The Examiner has objected to claims 6 and 19 as being indefinite. Specifically, the Examiner failed to uncover three of the dye structures listed in the Markush groups during a search. In response, the Examiner has requested that the Applicant provide formulas for these dyes. The Applicant submits that these dyes are well known in the art, and as proof of this, the Applicant is providing either a CAS or patent number that correlates to the three dyes identified by the Examiner. Specifically, the CAS No. for Direct Black 170 is 86167-73-9, the CAS No. for Solvent Black 13 is 12769-14-1, and the U.S. Patent No. for Pacified Reactive Black 31 is 5,725,641. Withdrawal of this rejection is respectfully requested in view of the information provided by the Applicant.

Rejections Under 35 U.S.C. § 103

Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing the prior art reference, or references combined, teach or suggest all the claim limitations in the instant application. Further, the Examiner has

to establish some motivation or suggestion to combine and/or modify the references, where the motivation must arise from the references themselves, or the knowledge generally available to one of ordinary skill in the art. The Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in any of the rejections.

The Examiner has rejected claims 1-22 as being obvious over “EP ‘852 in view of “EP ‘688. EP ‘852 describes an aqueous ink for ink-jet recording which can include a water-soluble dye, water, and a basic amino acid. Without giving any examples, the specification also mentions that “the present invention may further contain, if desired or necessary, other additives such as wetting agent, a surfactant, a pH regulator, an antiseptic, a mildew-proofing agent, an evaporation accelerator, and a chelating agent.” No specifics are given as to amounts of any of these ingredients, nor is any information given with respect to additive choice within each class of additives, other than urea and thiourea with respect to the wetting agent. In other words, this paragraph appears to have been added as a “catch-all” for other ingredients that are commonly and generically used in many inks. There is no suggestion anywhere in the reference as to the addition of amphoteric surfactants, which is an important element of the present invention.

EP ‘688 teaches of multiple ink-jet inks which can be used together to alleviate color bleed (the invasion of one color into another on the surface of the print medium). This bleed alleviation approach includes using one of a few types of surfactants at above the critical micelle concentration. One type of surfactant that can be used includes amphoteric surfactants.

The present invention is drawn to black ink-jet inks and methods of printing which include using these black ink-jet inks. The black ink-jet ink must include i) water, ii) a cosolvent; ii) a solubilized naturally occurring amino acid, and iii) an amphoteric surfactant. As pointed out by the Examiner, neither reference cited discloses all of these compositional components.

Referring to the Applicant’s specification on pages 5-6, the following relevant portions are provided for the Examiner’s convenience:

“Maintaining good optical density with black inks, particularly black dye-based ink-jet inks, can be a challenge. Typically, anionic surfactants and

other non-amphoteric surfactants are often used to control bleed in non-reactive printing systems. However, surfactants cause dye-based black ink-jet inks to penetrate plain and uncoated papers, thereby affecting optical density negatively. By combining amino acids with amphoteric surfactants in a liquid vehicle, black ink-jet inks prepared therefrom can have good optical density due to decreased plain paper penetration of the ink-jet ink.”

Thus, as made clear by the Applicant’s specification, it is the combination of the amino acid additive and the amphoteric surfactant that provides the improved optical density by preventing ink penetration into the media. In fact, the Applicant has acknowledged that anionic surfactants and non-amphoteric surfactants are often used to control bleed, but because they cause paper penetration, optical density can be reduced. EP ‘852 does not teach of the value of this combination, nor does it even suggest the use of the very specific type of surfactants taught by the Applicant over the use of other types of surfactants.

If one skilled in the art were to consider adding “a surfactant” to the inks of EP ‘852, as mentioned generically therein, where is the motivation to select an amphoteric surfactant? Unless an amphoteric surfactant is selected for use, increased penetration occurs and negatively impacts optical density of the ink. Thus, the single mention of adding “a surfactant” in EP ‘852 is too general of a teaching to lead one skilled in the art to claimed invention. Further, this general teaching does not provide sufficient motivation to seek out a reference that uses the particular type of surfactant for the particular purpose set forth in the EP ‘688, particularly when the purpose of EP ‘688 is to prevent bleed which is not addressed in EP ‘852 as being a problem. There are literally thousands of references that teach of ink-jet inks that contain surfactants, many of which make no differentiation regarding surfactant choice. If this is the case, why has EP ‘688 been selected by the Examiner to combine with EP ‘852?

The Applicant asserts that it is only by utilizing the present claims as a road map that one skilled in the art would make the combination suggested by the Examiner. This type of analysis amounts to hindsight analysis, which is impermissible. As taught uniquely by the Applicant, it is only by adding the amino acid (which itself can be a zwitterion) and an amphoteric surfactant together which

provides decreased ink penetration. The use of other surfactants does not exhibit the same reduced ink penetration, though they may be added for other reasons.

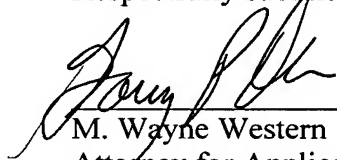
To further illustrate why the combination of EP '852 and EP '688 is improper, one can consider the reasons suggested by the two respective disclosures as to why its ingredients are added to each ink, respectively. EP '688 teaches of adding amphoteric surfactants (or other types of surfactants which the present Applicant teaches are non-functional for purposes of the present invention) to alleviate bleed between inks. EP '852 uses amino acids for a completely different purpose, namely to improve water resistance, provide satisfactory image density, and prevent bronzing. Thus, there is no motivation within the references themselves that would lead one skilled in the art to combine the use of amphoteric surfactants and amino acids, particularly since neither disclosure even suggests that its inks are lacking with respect the aspects of image quality presented in the other disclosure of the combination. For these reasons, withdrawal of the rejections under this section is respectfully requested.

In view of the foregoing, Applicants believe that claims 1-22 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone W. Bradley Haymond (Registration No. 35,186) at (541) 715-0159 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 22 day of April, 2005.

Respectfully submitted,



M. Wayne Western  
Attorney for Applicant  
Registration No. 22,788

Gary P. Oakeson  
Attorney for Applicant  
Registration No. 44,266

Of:

THORPE NORTH & WESTERN, LLP  
8180 South 700 East, Suite 200  
Sandy, Utah 84070  
(801) 566-6633

On Behalf Of:

HEWLETT-PACKARD COMPANY  
1000 NE Circle Blvd., m/s 422B  
Corvallis, OR 97330-4239  
(541) 715-0159